

MED64 Performer: binary file format (2004/04/13)

To dump a binary file from Performer you must click the Export Arbitrary Traces function available on any results page. In the dialog that pops up, you select the electrode and trace numbers you'd like to dump. Then you click the Export button, enter a file name, and be sure the Save as type: selection is set to the Binary files (*.dat) format, and click the Save button. Be sure to note the channels you saved, the traces (sweeps), the duration of recording per trace (the same for all traces), and the sampling frequency (the same for all traces).

To read the .dat file into another program you need to know the following format information.

1. All of the values stored in the file are 16-bit signed integers with low byte first (standard Windows format) so their values range from -32,768 to 32,767.
2. There is no file header, however there are time stamps recurring in the file that need to be skipped.
3. The first trace collected at each of 64 channels is stored in the .dat file as follows:

```
[time1_stamp1][time1_stamp2][time1_stamp3][time1_stamp4][Chan1_val1][Chan2_val1] .. [Chan64_val1]
[time2_stamp1][time2_stamp2][time2_stamp3][time2_stamp4][Chan1_val2][Chan2_val2] .. [Chan64_val2]
.
.
[timeN_stamp1][timeN_stamp2][timeN_stamp3][time2_stamp4][Chan1_valN][Chan2_valN] .. [Chan64_valN]
```

Each bracketed value represents a 16-bit signed integer. The values occur in left-to-right and top-to-bottom order as a large contiguous array without any breaks (the line breaks shown above do not occur in the file). The number of points gathered for per trace is $N = \text{sample_freq_in_Hz} * \text{time_in_secs}$.

In words, there are four 16-bit time stamp values followed by 64 16-bit data values each

belonging to a different trace but all collected at the same time. As shown above, each contiguous waveform belonging to a particular channel is found in a column.

If you export fewer than 64 channels then some of the columns will be missing.

4. If you export more than one trace per channel, as is typical, then the pattern shown above for a single trace will simply repeat such that all the blocks will be concatenated together in earliest to latest gathered order (the order shown in the export dialog box when you select the traces to export).